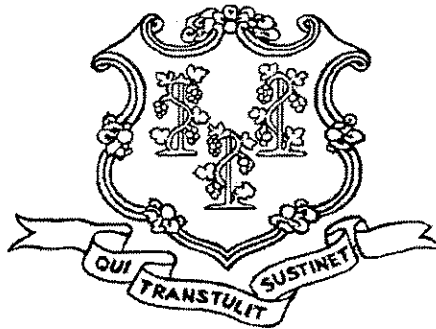


**STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC WORKS**

**CONSTRUCTION ADMINISTRATOR
PROCEDURE MANUAL**



**DEPARTMENT OF PUBLIC WORKS
JAMES T. FLEMING
COMMISSIONER**

**ROOM 453
165 CAPITOL AVENUE
HARTFORD, CONNECTICUT 06106**

June 25, 2003

CONSTRUCTION ADMINISTRATOR PROCEDURE MANUAL

1.0 DESIGN PHASE CONSTRUCTABILITY REVIEWS:

The Construction Administrator shall issue a written report for each Design Phase for each major building system and alternative building system analyzed. The DPW/PM shall approve each major building system to be implemented on the project.

1.1 SCHEMATIC DESIGN PHASE:

The Construction Administrator shall review and advise on the impact on the project's budget and schedule of all the major building systems and alternative building systems considered. This review shall include, but shall not be limited to, the following:

- 1.1.1 Site Conditions
- 1.1.2 Soil Conditions
- 1.1.3 Underground Water
- 1.1.4 Foundation Systems
- 1.1.5 Structural Frame
- 1.1.6 Roofing Systems
- 1.1.7 Exterior Wall Systems
- 1.1.8 Interior Finish Systems
- 1.1.9 Electrical Systems
- 1.1.10 Mechanical Systems
- 1.1.11 Special Construction Items
- 1.1.12 Conveying Systems
- 1.1.13 Existing Conditions of any of the above for retrofit/Addition
- 1.1.14 Asbestos
- 1.1.15 Site Utilities

1.2 DESIGN DEVELOPMENT PHASE:

The Construction Manager shall review and advise on the impact on the project budget and schedule of all the various products, materials, equipment and systems proposed for the project. This review shall include but not limited to the following:

- 1.2.1 Availability of materials and labor,
- 1.2.2 Identify long lead items,
- 1.2.3 Durability of materials,
- 1.2.4 Proper use materials,
- 1.2.5 Space requirements and allotments, in plan and section, of equipment and building systems,
- 1.2.6 Proper construction methodology,
- 1.2.7 Identify past problems with proposed materials or equipment, Propose alternative materials, equipment or interior building systems that could lead to cost savings,
- 1.2.8 Analyze and estimate the cost of all interior building systems not analyzed during Schematic Design, i.e.,
 - 1.2.8.1 Furniture Systems
 - 1.2.8.2 Computer Systems
 - 1.2.8.3 Telecommunication Systems
 - 1.2.8.4 Finish Systems
- 1.2.9 Blasting and Pile driving as it effects adjacent structures.

The Construction Administrator shall issue a written report detailing its findings.

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1.3 CONTRACT DOCUMENTS PHASE:

The Construction Administrator shall review and analyze all contract documents details for construction feasibility and proper construction techniques. The Construction Administrator shall review and analyze the contract specification for completeness and proper construction techniques. The Construction Manager shall prepare a site mobilization plan. Said plan shall identify but shall be limited to the following:

- 1.3.1 site fence and access gates;
- 1.3.2 truck wheel wash area
- 1.3.3 Construction Administrator office trailer;
- 1.3.4 Contractor's office trailers;
- 1.3.5 Contractor's storage trailers or storage laydown areas
- 1.3.6 Building excavation showing:
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 - 1.3.6.11 Any other item that can impact the project cost and schedule

The Construction Administrator shall provide the DPW with a site mobilization report describing the cost and schedule implications of all site mobilization work. The Construction Administrator shall provide the DPW with a report describing its analysis of the contract documents.

- 1.3.7 Permits & Review Agency Checklist (See Consultants Procedure Manual for Checklist:
 - 1.3.7.1 The above noted Checklist is required to be reviewed and filled out by the project's Architect and reviewed and approved by DPW/PM.

The Construction Administrator's responsibility is to coordinate, during the construction phase, on-site utility and permit related work.

2.0 SCHEDULE AND COORDINATION:

2.1 SCHEDULE RESPONSIBILITY: The DPW/PM is responsible for the development of the overall project schedule, and for interfacing with the user agencies on matters relating to occupancy or availability of the facilities for use. The DPW/PM is responsible for the development and control of the design and bidding schedule portions of the project schedule. The DPW/PM is responsible for establishing with the user agency a construction duration schedule and during construction to review and approve the Construction Administrator's schedule submissions. The Construction Administrator's schedule submissions. The Construction Administrator's responsibility is to develop master construction contractors to follow, and to approve and coordinate the multiple Construction Contractors detailed schedules through out the construction phase.

3.0 CONSTRUCTION ADMINISTRATOR'S SCHEDULE SERVICES DURING DESIGN: At the end of the schematic design phase and prior to the start of the design development phase, the Construction Administrator shall submit a report outlining his recommendations on the construction schedule. It shall include a verification of the over all construction duration and conceptual multiple construction contractors schedule submitted in a bar chart format. At the end of the design development phase and prior to the start of the contract documents phase the Construction Administrator shall develop and submit to the DPW/CM for review and approval, a preliminary master construction schedule. The schedule must be in a precedence diagram network (time logic format) outlining the following:

- 3.1 The proposed construction contractors overall contract duration's and their sequences;
- 3.2 Shop drawings submittal and review duration is estimated by the Construction Administrator.
- 3.3 The proposed early purchase long lead items (if applicable).
- 3.4 All other proposed site support services and special services contracts durations and their sequences.
- 3.5 Milestone(s) for Agency occupation and partial occupation is required.
- 3.6 The critical path for the project and float amounts available.
- 3.7 Mobilization and demobilization for each of the construction contractors and any service provider.

The cumulative schedules of all the proposed construction contracts for the packages should be within the construction duration established in the Construction Administrator's contract, any modification to that schedule has to be approved by the DPW/PM. At the end of contract documents and prior to the start of the bid process. The Construction Administrator shall produce a revised precedence diagram method network (time logic format) defining the duration and sequence of each bid package, shop drawings submittals and review schedule. Any lead items, float amounts, early and sequences shall be defined.

4.0 CONSTRUCTION ADMINISTRATOR SCHEDULE SERVICES DURING THE BIDDING PHASE: The Construction Administrator shall coordinate all bidding activities and their schedules with the DPW Bidding and Contract Section.

5.0 CONSTRUCTION ADMINISTRATOR SCHEDULE SERVICES DURING THE CONSTRUCTION PHASE: The Construction Administrator, within fourteen (14) calendar days of the construction contractors signing their contracts, shall review with the construction contractors the scheduling and coordination requirements. The Construction Administrator shall receive from the construction contractors fourteen (14) calendar days later, preliminary schedules for the Construction Administrator's review and approval. The Construction Administrator within thirty (30) calendar days of the DPW's notice to proceed with the construction phase of its contract and with the award of the prime's construction contracts shall submit to the DPW its coordinated construction contractor's submittal schedule and the initial construction schedule as a base line schedule for review and approval and during construction for comparison with actual work progress. Thereafter, on a monthly basis, the Construction Administrator shall submit to the DPW/CM the following:

- 5.1 An updated Master construction (in the same format as that required during the design phase) schedule which shall include a summary comparisons of the latest schedule and the previous month (target) dates for all construction contractors activities during construction.
- 5.2 A summary bar chart report and activity listing report comparisons of latest schedule and the previous month (target) update.

- 5.3 Man power and cost loaded schedule. This information shall be supplied to the Construction Administrator. It is the Construction Administrator's responsibility to insure that the construction contractors contracts include provisions giving direction to the construction contractors to submit to the Construction Administrator the necessary information.
- 5.4 A copy of the project network file saved on a 3 & 1/2" computer diskette (floppy disk file).
- 5.5 90 day look ahead detail bar chart on a monthly basis showing comparisons of latest schedule and the previous primary month (target) update.
- 5.6 Other as requested by the DPW.

These reports shall be submitted on a monthly basis after notice to proceed with the construction phase is given to the Construction Administrator. They shall be submitted with the Construction Administrator's own application for payment. The reports shall have a data date (update date) of no longer than four (4) weeks from the date of submittal of the latest construction contractor's application for payments.

All change orders to the construction contractors contracts that are approved have to be clearly represented with separate activities on the schedule of each construction contractor. Field office files that are pending which have a potential impact on the project's schedule have to be clearly outlined on the submitted schedule. Upon the review of the construction contractor's updated monthly schedule, the schedule indicates a delay of 14 calendar days or more the Construction Administrator has the option of recommending to the DPW the withholding of interim payments in accordance with the construction contractor's supplementary general conditions which are included with the construction contractors contract. All site support activities and special services activities shall be scheduled by the Construction Administrator and included as part of the Construction Administrator's schedule submittals.

- 6.0 **SOFTWARE REQUIREMENT:** The DPW requires the Construction Administrator to submit their schedules utilizing a PC based system as required by DPW. The Construction Administrator shall use the a PC based system as required by DPW for logging documents and any variances to the project. The DPW will allow substitutes to the expedition system upon written approval.

7.0 **ESTIMATING:**

7.1 SCHEMATIC DESIGN PHASE: The Construction Administrator shall provide the DPW for its review and approval computerized cost estimates by trade, in the "Construction Specification Institute" (CSI) format, utilizing area, volume or similar conceptual estimating technique. The schematic design phase estimate shall contain an amount of detail commensurate with the schematic plans, specifications, and details submitted by the Architect. The Construction Administrator shall estimate all major building systems and alternate building systems. (See Constructability Section of this manual). The schematic design phase estimate shall contain, but is not limited to, the following items:

- 7.1.1 General Conditions
- 7.1.2 Major Building Systems
- 7.1.3 Major Equipment Purchases
- 7.1.4 Testing Requirements
- 7.1.5 Various Trades
- 7.1.6 Weather Considerations
- 7.1.7 Site Conditions
- 7.1.8 Soil Conditions
- 7.2 All items itemized in the schematic design phase estimate shall be priced by a unit of measurement and a cost per unit if measurement and a cost per unit of measurement; no

lump sum prices shall be allowed unless noted as an allowance. The Construction Administrator is responsible for a complete cost estimate. The Construction Administrator shall request as much information, or clarifications to the documents, as required to provide a complete estimate. The Construction Administrator shall provide the DPW for the DPW/PM's review and approval with a written schematic estimate report including the computerized cost estimate and any assumptions made in order to provide the DPW with a complete estimate. The Construction Administrator shall be prepared to review the estimate and in detail with the Architect and the DPW and make any necessary changes to the estimate as directed to by the DPW.

7.2 DESIGN DEVELOPMENT PHASE: The Construction Administrator shall provide a computerized quantity survey cost estimate in the "Construction Specification Institute" (CSI) format.

- 7.2.1 The design development phase estimate shall contain an amount of detail commensurate with the design plans, specifications, and details submitted by the Architect.
- 7.2.2 The Construction Administrator is responsible for a complete cost estimate. The Construction Administrator shall request as much information, or clarifications to the documents, as required to provide a complete cost estimate.
- 7.2.3 The Construction Administrator shall estimate the cost of products, materials, equipment and systems proposed for the project. (See Constructibility Section of this manual).
- 7.2.4 The Construction Administrator shall work to minimize the use of allowances in this estimate. The Construction Administrator shall clearly identify the scope and price of allowances.
- 7.2.5 The Construction Administrator shall itemize the items included in the general conditions.
- 7.2.6 The Construction Administrator shall provide the DPW/PM for review and approval with a written design development phase estimate report including the computerized cost estimate and any assumptions made in order to provide the DPW with a complete estimate.
- 7.2.7 The Construction Administrator shall be prepared to review the estimate and in detail with the Architect and DPW and make any necessary changes to the estimate as directed to by the DPW.

7.3 CONTRACT DOCUMENTS PHASE: The Construction Administrator shall provide a final, computerized, quantity survey cost estimate in the "Construction Specification Institute" (CSI) format.

- 7.3.1 The estimate shall itemize all materials and equipment shown on the drawings and listed in the specifications.
- 7.3.2 The final cost estimate shall incorporate any changes made to the plans and specifications during the state review process.
- 7.3.3 The Construction Administrator shall provide the State with a written contract documents phase estimate report.
- 7.3.4 The Construction Administrator shall be prepared to review the estimate and in detail with the Architect and DPW and make any necessary changes to the estimate as directed to by the DPW.
- 7.3.5 The Construction Administrator shall review drawings and specifications to insure that systems, equipment, components, materials, and construction techniques are fully identified and specified, including interfaces between trades, so as to

permit proper and complete bidder response to all construction contract bid packages.

- 7.3.6 The Construction Administrator shall review, analyze, recommend and upon DPW's approval execute any changes to the general conditions or supplemental general conditions to ensure that all special requirements and conditions required to implement the project are addressed. Any changes to the General Conditions requires both the DPW's and the Attorney General's approval.
- 7.3.7 The Construction Administrator shall review the drawings and specifications with the Architect to help minimize areas of conflict and overlapping in the construction work. It shall manage the separation of the project into construction contracts for various categories of the construction work.
- 7.3.8 The Construction Administrator shall work with the Architect to ensure that the contract documents clearly and precisely define each construction contract bid package.
- 7.3.9 The Construction Administrator shall review the complete list of the construction contract bid package for all materials and construction work, in order to provide full assignment, coordination and responsibility for the scope of work.
- 7.3.10 The Construction Administrator shall review and advise on the bidding format and instructions for each construction contractor's contract to ensure proper response to the base bids, specific alternate bids and unit price requests.

7.4 BIDDING DOCUMENTS AND PROCEDURES The following is a list of Construction Administrator duties during the bidding phase, including related bid documents:

- 7.4.1 **BID AND AWARD SCHEDULE:** The Construction Administrator shall comply with all bidding and award requirements listed in Sections 4b-91 through 4b-98 of the General Statutes of Connecticut, as revised. The Construction Administrator shall give the DPW's Bidding and Contract Section a copy of the bid and award schedule for multi-packages. The bid and award schedule should be submitted to the bid and contract section during the review of the tracings and masters stage with the sign off of the DPW/PM. Said schedule will indicate the Construction Administrator's tentative pre-bid meetings and bid opening dates.

7.5 BID PROCEDURES: All such invitations for bids shall be by advertisements inserted at least once in one or more newspapers having a circulation in each county in the state. The commissioner shall determine the manner of submission and the conditions and requirements of bids, and the time within which the bids shall be submitted for each such contract, consistent with the provisions of Sections 4b-91 to 4b-96 of the General Statutes of Connecticut, as revised. The DPW can modify said procedures if its staff is not available to take on some of the duties. In such situation the Construction Administrator shall review and discuss with the DPW Bidding and Contract Section the attached bid procedures to determine each party's responsibility in implementing the bid procedures.

- 7.5.1 **ADDENDA:** The Construction Administrator shall be responsible for gathering data from the Architect, DPW or the prospective bidders and with the direction of the DPW/PM, process all addenda as per the DPW's sample in the Consultant's Procedure Manual Chapter 4. The DPW/PM will be responsible for the in-house review and obtaining internal sign-off by DPW.
- 7.5.2 **BID OPENING:** The Bidding and Contract Section Chief is responsible for receiving and opening the bids and with fourteen (14) calendar days issue the official bid list. The Construction Administrator shall analyze the bid report and

advise the DPW, in writing, of any problems associated with the lowest responsible qualified bidders.

7.5.3 BIDDING DOCUMENTS:

- 7.5.3.1 DPW's official addenda (see Consultant's Procedure Manual)
- 7.5.3.2 DPW's memo on the qualified responsible lowest bidders (generated by DPW).

7.6 BIDDING DOCUMENTS AND PROCEDURES:

7.6.1 PROCEDURES:

- 7.6.1.1 14 calendar days after the bid opening, DPW Bidding and Contract Section will issue a memo listing lowest qualified bidders. The first listed bidder indicates the lowest bid.
- 7.6.1.2 The DPW/CM is responsible to give the Construction Administrator a signed copy of the bid report.
- 7.6.1.3 The Construction Administrator shall analyze the bid report and advise DPW, in writing, of any problems associated with the lowest responsible qualified bidders.

7.7 CONSTRUCTION PHASE:

- 7.7.1 **DOCUMENTATION:** The Construction Administrator shall maintain, and the DPW, shall at all times have access to a complete file of project documents and a complete set of drawings and specifications at all times during the life of the project at their site field office. The entire file will be turned over by the Construction Administrator to the DPW Project Manager it at the completion of the project. The files shall consist of, but not be limited to the following:

- 7.7.1.1 Project correspondence (filed by responsibility) between all members of the project team including but not limited to: Architect, Engineer, construction contractors, sub-contractors, Suppliers, the user Agency, The DPW, and the Construction Administrator.
- 7.7.1.2 Submittals and Shop Drawings to and from the Architect, Engineer, construction contractors and Suppliers.
- 7.7.1.3 Schedules: The base Critical Path Method schedule should remain on file along with all monthly updated schedules.
- 7.7.1.4 Change Orders and all its supporting or analytical related information, Requests for Information, Engineering Bulletins, Proceed Orders, etc.
- 7.7.1.5 Requisitions from construction contractors.
- 7.7.1.6 Contract Drawing and Specifications, Addenda.
- 7.7.1.7 Meeting Minutes for weekly or bi-weekly job site meetings involving project team.
- 7.7.1.8 Permits/Correspondence with State Building Inspector, Fire Marshal, Elevator inspection, etc.
- 7.7.1.9 Summary of testing/inspection reports.
- 7.7.1.10 Construction contractor's contract, Bond, Insurance Certificates, etc.

- 7.7.2 **REPORTING:** The Construction Administrators reporting shall consist of, but not be limited to, the following:

- 7.7.2.1 Weekly Construction status Report to DPW Project Manager (see attached sample).
- 7.7.2.2 Monthly progress reports (see attached sample).

7.7.2.3 Monthly updates of the Master Schedule against the target schedule of the previous month.

7.7.3 **DOCUMENTATION AND REPORTING FORMS:** For a sample of the forms see

7.7.3.1 Weekly Construction Status Report .

7.7.3.2 Weekly Critical Issues Report (designrev form 239)

7.7.3.3 Monthly Progress Report (designrev form 240).

7.7.4 **SPECIAL SERVICES:** Construction Administrator will incorporate into its scope of responsibilities when directed by the DPW, special services as required during the course of the project as follows:

7.7.4.1 Engineering Services: Testing & Inspection including but not limited to:

- 7.7.4.1.1 Engineering Layout
- 7.7.4.1.2 Surveying
- 7.7.4.1.3 Soils
- 7.7.4.1.4 Concrete
- 7.7.4.1.5 Masonry
- 7.7.4.1.6 Structural Steel
- 7.7.4.1.7 Roofing
- 7.7.4.1.8 Glazing
- 7.7.4.1.9 Insulation
- 7.7.4.1.10 Suspended Ceiling Systems
- 7.7.4.1.11 Elevator
- 7.7.4.1.12 Plumbing
- 7.7.4.1.13 Seismic Restraints
- 7.7.4.1.14 HVAC Systems
- 7.7.4.1.15 Electrical Systems

7.7.4.2 These inspections and testing will be supervised by the Construction Administrator staff on-site and shall be performed by an independent testing firm hired by the Construction Administrator upon its recommendation and when directed to by DPW as necessary to assure compliance with the contract documents, codes and standard construction industry practices.

7.7.5 **SITE SUPPORT SERVICES:** The Construction Administrator shall be responsible for providing and managing the site and support services. These services are identified in (for reference) but are not limited to the list below. Some of these services can be provided and managed by including them in the construction contractor's general conditions. In some cases these services shall be managed by the Construction Administrator when it contracts with the service providers directly. A decision on this issue shall be arrived at during contract negotiations between the DPW and the Construction Administrator.

1. DPW/Architect/CM office rent
2. Computers
3. Temporary Water
4. Office Janitor Service
5. Temporary Heat
6. Temporary electricity
7. Temporary fire protection
8. Police/security/traffic control

9. Project signs material
10. Temporary toilet
11. Temporary road installation
12. Site mud and dust control
13. Temporary fence/barricades
14. Temporary parking
15. Sidewalk protection
16. Temporary elevator/personnel hoist
17. First Aid
18. Material hoist and crane
19. Ladders/ramps/stairs
20. Temporary enclosures
21. Protect finished work
22. Temporary dust partitions
23. Rubbish removal/dumpster & trash chutes/hoppers
24. Interim cleanup
25. Final cleaning & glass
26. Snow removal
27. General weather protection
28. Furniture
29. Survey equipment and supplies
30. Progress photographs
31. Ceremonies – groundbreaking
32. Testing – special inspections
33. Bid packages printing and distribution

CHANGE ORDERS

The DPW has four (4) types of Change Orders (indicated on transmittal designrev 84):

- (a) Architect Error/Omission Change Order
- (b) Field Condition Change Order
- (c) Agency Request Change Order
- (d) Construction Administrator Error/Omission Change Order

The Construction Administrator shall assist the DPW in the documentation of design deficiencies or design additions (changes), determining responsibility for the cost of the resulting construction contract modifications, and estimating the recovery cost and schedule impact stemming from such changes to the contract. The following is a procedure check list in processing the above note change orders:

a. Architect Error/Omission Change Order

- i. Construction contractor issues Request for Information (RFI) to Construction Administrator.
- ii. Construction Administrator Reviews and distributes RFI to the Architect, DPW/CM and DPW/PM.
- iii. Architect reviews RFI and determines if Engineering Bulletin (E.B.) is required.
- iv. If Architect determines No E.B. is required, Architect notifies Construction Administrator.
- v. If Architect determines E.B. required, Architect prepares E.B. with written cost estimate. This Procedure shall take no longer than (2) weeks (10 working days).

- vi. Architect issues original E.B. to Construction Administrator for distribution to the construction contractor for pricing.
- vii. Construction Administrator shall also issue copy of E.B. to DPW/PM, DPW/CM, and if a threshold type project, the Construction Administrator shall send a copy to the State Building Inspector's Office.
- viii. DPW/CM forwards E.B. to DPW Design & Review for review if necessary.
- ix. The construction contractor then submits proposal (with full backup and supporting Documentation) to the Construction Administrator, with (7) days after receiving the E.B. from the Construction Administrator.
- x. Construction Administrator reviews and negotiates price and time impact with the construction Contractor, the Construction Administrator shall inform the DPW/PM of the potential cost and Schedule impact of the proposed change order.
- xi. Construction Administrator prepares Change Order documents.
- xii. Construction Administrator sends complete Change Order package to DPW/CM for final approval processing.
- xiii. Upon approval by DPW, DPW/CM forwards approved Change Order to Construction Administrator. Construction Administrator issues original change order to the construction contractor and copy to the Architect.
- xiv. Construction contractor can now bill against the Change Order.

b. Field Condition Change Order

Use the same process as noted above except:
If the construction contractor or Construction Administrator identifies a field condition – an RFI must be generated and forwarded to the Architect for review.

c. Agency Request Change Order

Use the same process as noted above except:

Construction Administrator must first receive from DPW PM an official user Agency Request letter, signed by the individual authorized to act on behalf of the Commissioner of the user Agency and approved/signed by DPW's Commissioner or other individuals authorized to act on behalf of the Commissioner.

Construction Administrator issues request to Architect.

Architect prepares the Engineering Bulletin.

d. Construction Administrator Error/Omission Changer Order

Use same process as noted in Section A, Architect Error/Omission Change Order.

CHANGE ORDER PACKAGE

This package must consist of the following:

- (a) Cover Letter – to explain that the Construction Administrator has reviewed and approved the cost and schedule impact proposal and have determined it to be fair and reasonable. It should also state if there is any time extension due to the Change Order, the time impact of this change should be backed up with the scheduling requirements as specified in the schedule and coordination section of this manual, as well as describe completely, with drawings if necessary, the work to be changed.
- (b) One (1) (designrev 84) Transmittal Change Order, (was W-1) signed by the Construction Administrator (Initiated by Construction Administrator).
- (c) Two(2) Change Order Funds Request (designrev 114), (was CO-70) – (1) yellow, (1) blue (Initiated by Construction Administrator).
- (d) Requested Change Order Proposal, designrev 242 (Initiated by Construction Administrator).
- (e) Itemized breakdown of proposed change designrev 226 (was CO-51) (Labor and Materials) (Initiated by Prime).
- (f) Engineering Bulletin – The Project Architect generates the original Engineering Bulletin, the Construction Administrator adds a cover letter to said Engineering Bulletin and distributes to: Construction Contractors, DPW and all Architect Consultants.

NOTE: DPW/CM can supply standard blank forms for the above noted items upon request of the Construction Administrator. Forms are also referenced in Chapter 4.

SUPERVISION AND INSPECTION

The Construction Administrator shall supervise and inspect all work of the construction contractors for compliance with the contract documents. The Construction Administrator shall manage the project Safety, Quality Assurance and Quality Control Program.

The Construction Administrator shall provide the coordination and methodology required to conduct regular inspections of the work through the final completion and acceptance of the project. The purpose of the inspections will be to assure that the work is performed in accordance with the drawings and specifications. This will be accomplished in conjunction with the Architect's involvement during project status meetings and job site observations.

Supervision shall include but not be limited to the following:

- a. The Construction Administrator shall coordinate with and endeavor to achieve satisfactory performance from each of the construction contractors. It shall recommend courses of action to the DPW when requirements of a contract are not being fulfilled and the non performing party will not take satisfactory corrective action. When required by the DPW, it shall provide recommendations for action to be taken by the DPW when construction contractors are performing unsatisfactorily. It shall include necessary supporting data to substantiate poor performance.
- b. The Construction Administrator shall issue a deficiency notice to construction contractors if the Contractor fails to install the work per plans and specifications. The Construction Administrator will maintain a log of all deficiency notices and corrections made.
- c. Substantial Completion: The Construction Administrator shall determine substantial completion of the work or designated portions thereof and prepare for the DPW a list of incomplete or unsatisfactory items and a schedule for their completion. If there should remain minor construction contractor items to be completed, the Construction Administrator shall deliver, in writing, to each construction contractor and the DPW a schedule to complete said items within a reasonable time thereafter.

- d. Start-up: With the State's maintenance personnel, the Construction Administrator shall direct the checkout of utilities, operations systems and equipment for readiness and assist in their initial start-up and testing by the construction contractors.
- e. Final Completion: The Construction Administrator shall determine final completion and provide written notice to the DPW and the Architect that the work is ready for final inspection.

These inspections shall include but is not limited to all inspections and tests as required by the Department of Public Safety, Health EPA, etc. It shall also secure and transmit to the State the required guarantees, affidavits, releases, bonds and waivers. It shall also turn over to the State all keys, manuals, marked-up drawings and specifications and maintenance stocks. The Architect will use the marked-up drawings to produce the final "as-built" record drawings.

INSPECTION shall include but not be limited to the following:

a. Quality Control

Government Inspections: The Construction Administrator shall insure that all Federal, State and/or local government agency inspections are satisfactorily performed.

Contract Documents Compliance: The Construction Administrator shall inspect the Work for defects and deficiencies without assuming any of the Architect's responsibilities. This is not a substitute for the Architect's own inspection.

Agency Inspection & Acceptance: The Construction Administrator shall coordinate final inspection for the user agency's acceptance, with the DPW User Agency, Architect and construction contractors.

b. Quality Assurance:

The Construction Administrator shall be responsible for a project Quality Assurance Program which will be based on the following four point inspection plan.

A four point inspection plan for each separate construction contractor will be implemented by the Construction Administrator for work described by each division of the technical provisions section of the specifications. This plan will be implemented by the Construction Administrator's project superintendent and the construction contractor. This plan will include the following:

- i. Preparation Inspection – Prior to commencing Work the construction contractor will meet with the Construction Administrator and check all pre construction items for conformance, i.e., submittals and quality standards.
- ii. Initial Inspection – Upon completion of a representative sample of the given feature of the work where required by the technical provisions section of the specifications, the construction contractor shall be required to request an inspection via an inspection request form submitted to the Construction Administrator. The Construction Administrator shall then coordinate the inspection with the Architect, the construction contractor, and others if appropriate.
- iii. Follow-On Inspection – The construction contractor will be required by the State to assign an individual to be responsible only for quality control. This responsibility shall include ensuring that all the Work complies with the level of quality established during the inspections. The results of compliance shall be reported and turned in daily by the construction contractor's superintendent as part of its daily report.

- iv. Completion Inspection – Upon completion of a given feature or phase of the Work, the State shall require the construction contractor to schedule an inspection via an inspection request form submitted to the Construction Administrator. The Construction Administrator will then coordinate the inspection time with the construction contractor and Architect, as appropriate. Non conforming items will be identified in a punchlist generated by the Architect, reviewed by the Construction Administrator and corrected by the construction contractor. An inspection request form, along with an inspection checklist, will be utilized to document these inspections.

Safety – Outline

- a. The Construction Administrator shall review, coordinate and approve the construction contractors' safety programs prior to work commencing.
- b. A weekly report as to whether safety precautions are being followed is to be filled with the DPW/CM.
- c. Citations will be issued by the Construction Administrator to construction contractors found to be in non compliance.
- d. The Construction Administrator shall have the authority to suspend work in a given area found to be dangerous and/or life threatening.
- e. Individuals continually cited for safety violations (i.e., hard hats, safety shoes, etc.) can be removed from the site by the Construction Administrator.
- f. Construction contractors who continually violate safety requirements can be directed by the Construction Administrator to conduct on-site training sessions for their entire crew (s) during normal working hours and at the construction contractors expense.
- g. The Construction Administrator can recommend to the DPW that progress payments be withheld if unsafe conditions are not corrected in a timely manner.

CONTRACT CLOSEOUT/FINAL PAYMENT

Overview

Prior to the release of the construction contractors final payment a closeout checklist will need to be prepared for submission with the final payment. In concert with the Architect the Construction Administrator shall endeavor to ensure that all contractual obligation have been addressed prior to the release of final payment.

All issues of Non-Compliance and all Discrepancies must be resolved.

As built drawings must be reviewed by the Construction Administrator then submitted to the Architect for its review. The Architect then incorporates all changes into the Mylars and then submits them to the Construction Administrator. An evaluation of each of the construction contractors goals for participation in Small Business Enterprise and Minority Business Enterprise programs is required.

All Operations and Maintenance manuals, spare parts, attic stock, etc, should be turned over to the using Agency.

Warranty information will be provided by each of the construction contractors and shall be verified by the Construction Administrator.

A final safety report should be submitted by the contractor noting lost time and workers compensation claims and shall be verified by the Construction Administrator for completeness and accuracy.

Documents

The following completed documents are required from the Construction Administrator to effect a contract closeout.

- a. The cover letter from the Construction Administrator shall identify the contract; indicate the Construction Administrator's recommendation; tabulate the items attached noting the number of copies provided.
- b. Certificate of Substantial Compliance – Signed by the Architect and Engineer of record (1 copy) denoting his registration number and co-signed by the Construction Administrator. Any stipulations/qualifications noted should be kept to a minimum.
- c. Closeout Checklist (1 copy) – This checklist should provide an overview of the completeness of the closeout process and acts as a verification that no loose ends remain unattended.
- d. Field Report, Liquidated Damages Assessment (2 copies) This form identifies the original duration of the contract, time extensions, original and revised end dates and project over runs (if any). This form is forwarded to the Department of Public Works Bidding and Contracts Section and services as the mechanism to defer or implement the assessment of liquidated damages. Please note that if liquidated damages are deemed appropriate the Construction Administrator should take steps in advance of the contract closeout to implement recovery.
- e. Field Evaluation Report (2 copies) – This report serves to document the distribution of change orders issued to the contractor; summarizes and evaluates his performance of the contractor; and evaluates the quality of the documents and Architect's performance.
- f. Final Payment Requisitions (13 original copies) – It is the Construction Administrator's responsibility (as with the periodic payment) to verify the accuracy of the requisition. While this final payment of retained monies, change order work or partially completed contract work may also be requisitioned at this time.

The final payment will equate to the revised contract amount less any prior disbursements. The signature of the contractor must be notarized as a verification that balance of contract payments is being requested, thereby acknowledging contract closeout and his obligation to subcontractor debts.

- g. Guarantees/Warranties – It is the Construction Administrator's responsibility to verify that the construction contractors have submitted all guarantees and warranties, training, O & M manuals, attic stock, spare parts, etc. as required by contract. The Construction Administrator should verify the accuracy of the warranty, including any emergency numbers which may be provided.

Administrative Procedures

Below please find a synopsis of the administrative procedures employed by the DPW during contract closeout.

- a. The DPW Project Manager receives the payment and verifies its accuracy. An adding machine tape is run denoting breakdown of the requisition for the benefit of the Project Accounting unit. Notification is sent to the Surety advising them of the State's intent to render final payment. The Surety has 15 days to object. A cover memo is generated which tells the reader that he is handling a final payment. The requisition is signed by requisition is forwarded to the user Agency for their representative's signature.
- b. Once back from the Agency the payment is forwarded to the DPW Bidding and Contracts Section to verify that there are no known claims against the State. The requisition is routed to the DPW Project Accounting Section to verify the contract amount and payment information. The requisition is stamped "final" and returned to the DPW Project Manager where each requisition is combined with varying information resulting in unique packages for distribution. The packages are earmarked for each recipient and sent to the DPW project accounting for payment and disbursement.

CLAIMS

- I. The Construction Administrator has a responsibility to the DPW in accessing and processing claims and disputes.
- II. The Construction Administrator shall provide the necessary means to provide the prevention and/or mitigation of claims. The actions taken, services rendered, and data gathered by the Construction Administrator during contract administration are key elements in reducing the number and monetary amounts of construction contractor's claim. Therefore the Construction Administrator shall:
 - (a) Administer the contract fairly and in accordance with the contract documents.
 - (b) Identify and evaluate potential problems considering the merits and validity of the claim.
 - (c) Coordinate with the responsible parties to prevent or minimize problems.
 - (d) Refute promptly, in writing, any written statements by the contractor that are not accurate.
 - (e) Take appropriate action including construction modifications to correct the problem.
 - (f) Record all documentation (including but not limited to progress reports, instructions given, quotes of contractors statements related to the potential claim, records of existing conditions, test reports, photographs, etc...)
 - (g) Process expeditiously any contractors claim so the written decision can be issued within the time frame established.
 - (h) Review the contractors statement of facts supporting the claim to verify that they are sufficiently clear, complete, and supported by documentation.
 - (i) Provide a summary report accompanied by the claim and a written opinion to the DPW/CM.
 - (j) Treat any review or opinion of the claim by the DPW or its agents as privileged information.

- (k) Initiate negotiations to settle a claim. A formal negotiation session with the contractor must not be convened until the claim has been reviewed by the DPW.
 - (l) Record all efforts made at resolving a claim.
- III. The Construction Administrator shall assist the DPW in assessing liquidated damages as provided in the contract documents. If the construction contractor fails to complete the work, deliver materials, or perform services within the time specified by the contract documents, or by contract extensions, the construction contractor may be liable to liquidated damages for each calendar day of delay. The DPW, may terminate the contract due to default or, if applicable, for its convenience. In the case of termination the contractor may be liable for liquidated damages accruing until the DPW may reasonably obtain delivery or performance of similar work. Assessment of liquidated damages begins the day following the completion date as identified in the contract or as modified by DPW granting extensions, and terminates the day the work is accepted and the Architect issues a certificate of substantial completion.

PROJECT CLOSEOUT

- I. Near the end of construction, the project enters closeout phase. In addition to the contract closeout responsibilities, the Construction Administrator is also responsible for :
- a. Policing of punchlist activities.
 - b. Testing.
 - c. Lifesafety testing and compliance.
 - d. System demonstrations.
 - e. Training.
 - f. Turnover of the construction contractors supplied items (including the building).
 - g. Compilation of warranty and guarantee information for the Agency.
 - h. Agency acceptance.
 - i. Document turnover.

II. Punchlists

While the construction contractors are responsible for performing the work identified in the punch lists, the Construction Administrator is responsible for the monitoring of progress and verifying completeness of repairs and scheduling of inspections. The Construction Administrator shall with the construction contractors develop a schedule for corrective work. Updates of this schedule including a tabulation of incomplete items will be presented periodically for DPW/CM's review. The Construction Administrator shall verify corrective efforts and notify the Architect when work is ready for reinspection.

III. Testing

Testing parameters shall include a sequence of operations which will be obtained from the Architect. Systems shall be operated according to these parameters, and witnessed by the Construction Administrator and Architect or its subconsultants. The construction contractors will demonstrate the successful operation sequence prior to owner demonstrations. This will be verified by the Construction Administrator.

IV. Lifesafety Testing and Compliance

The State of Connecticut does not receive beneficial occupancy of a facility until it has been deemed safe to inhabit. This is achieved by the issuance of a Certificate of Occupancy. It

is the Construction Administrator who shall manage, coordinate and schedule life safety testing with the Bureau of the State Building Inspector and State Fire Marshal. It is imperative that the life safety systems be tested prior to testing for operation by the Bureau of the State Building Inspector and State Fire Marshal.

- V. The Construction Administrator shall develop and maintain a tracking log that identifies code violations and discrepancies. This log shall include serialized enumeration of each deficiency, description, governing authority (State Building Inspector, State Fire Marshal, Department of Environmental Protection, etc.), corrective action required, and verification. An action column will be required to designate the responsible party. This tabulation will be forwarded to the State Building Inspector for their concurrence. Modification requests or letters of acknowledgment from the governing authority which absolve the deficiency will be noted in the verification column and maintained in a file of documents required to satisfy Certificate of Occupancy mandates.
- VI. This log is a tool which identifies items which will inhibit the pursuit of a Certificate of Occupancy.
- VII. The following procedure must be employed in order to adequately address/resolve a Discrepancy Notice issued by the Department of Public Safety.
 - a. A Discrepancy is issued as a result of a field inspection by the State Building Inspector or Fire Marshal in which a deficient condition is observed. The discrepancy is assigned a serialized number and shall remain open until:
 - i. Corrective work occurs, thereby achieving compliance, or
 - ii. A modification request identifying alternate compliance may be submitted by the Architect for review and action by the Bureau of the State Building Inspector.
 - b. If the condition as constructed differs from the contract documents but is acceptable to the Architect and still satisfies the lifesafety code, an Engineering Bulletin is required to alter the contract documents for which the original building permit was issued.
 - c. Should the modification request be pursued (alternate VII ii) the Architect will furnish an Engineering Bulletin to the Bureau of the State Building Inspector for their approval.
 - d. After corrective work is completed in accordance with the original contract documents or via a changed condition (Engineering Bulletin) the work shall be inspected by the State Building Inspector for code compliance. Once satisfactorily completed, the item shall be resolved.

VIII. Systems Demonstrations

The Construction Administrator shall coordinate systems testing and dry runs. Coordination shall include enlisting the assistance of the contractors to perform sufficient dry runs to ensure that systems perform as designed for Architect (its Subconsultants) and DPW demonstrations. Start-up procedures shall be obtained from the Architect to develop testing procedures and parameters. Successful operation shall be verified prior to owner demonstrations.

IV. Training

The Construction Administrator will coordinate training provided by the contractor's technicians for the benefit of the user Agency. Care will be taken to ensure that the user Agency has adequate time to assemble appropriate personnel to attend training sessions. The Construction Administrator will solicit credentials of the trainer from the construction contractor to verify that training will be done by qualified personnel.

Systems shall be de-bugged and tested prior to engaging in training. Operations and Maintenance manuals are required to perform training. All manuals must have the Architect approval. It is the Construction Administrator's responsibility to verify that systems are tested and manuals are in place before initiating of the user Agency staff.

x. Spare Parts

The Construction Administrator with the Architect shall develop a List of construction contractor Closeout Requirements. This tabulation shall identify: training, demonstrations, tools turned over to the owner, spare parts, attic stock, O & M manuals, service proposals etc., and shall indicate the pertinent specification section. The Construction Administrator will work with the contractors to identify target dates for delivery. This log will be updated on a regular basis during the closeout process.

xi. Warranties & Guarantees

Warranty/Guaranty requirements shall be noted in the List of the construction contractor Closeout Requirements. All information relative to the construction contractor warranties shall be bound and submitted to the owner/agency. The Construction Administrator shall verify Warranty information for accuracy and shall check any emergency numbers to ensure their validity.

xii. Certificate of Occupancy

Upon successful completion, inspection and acceptance of all Certificate of Occupancy requirements the Construction Administrator shall coordinate with the Architect and prepare the Certificate of Substantial Compliance, noting any deviations from the contract documents. This Certificate and list of deviations shall be submitted to the DPW Project Manager.

The DPW will, in turn, submit a Request for Certificate of Occupancy for the project to the Department of Public Safety.

Department of Public Safety Certificate of Occupancy Requirements (partial listing):

- a. Field Inspection report, comments and discrepancies resolved.
- b. Plan Code Review comments and discrepancies resolved.
- c. State Fire Marshal comments and discrepancies resolved, and signed acceptance by the Fire Marshal.
 - i. Smoke test of approved smoke control system or alternate approved smoke management plan.
 - ii. Testing of the emergency/standby power system.

- iii. Testing of the fire suppression, alarm, signal and emergency systems.
- d. State Boiler Inspection report and operating certificate. Certification of HVAC operation and balance.
- e. State Elevator Inspection report and operating certificate.
- f. Department of Health approval of sewer, health care, kitchen and water.
- g. Department of Environmental Protection fuel oil and hazardous material approvals.
- h. Local authority approvals, if applicable.
- i. Plans showing "As-Built" accuracy presented or committed for review.
- j. Third party testing and inspection reports submitted and approved.
- k. A final inspection will be performed by the Bureau of the State Building Inspector with written approval or denial in ten days.

In addition, the Construction Administrator shall coordinate, witness and sign off on the performance of the following items. This tabulation represents a portion of the items which must be inspected/satisfied in order to obtain a Certificate of Occupancy from the Department of Public Safety and does not represent a complete list..

Shut off valves	- gas appliances
Kitchen hood tests	- Kitchen hood wash systems
Sprinkler System	- 200# static load test - flow test - tamper and flow switches - ISO approval
Fire Alarm	- Panel Inspection - testing of devices
Emergency Lighting	- lighting distribution - performance test (battery)
Standby Generators	- interrupt commercial power supply - transfer switch operation - load test
Switch gear	- grounding - short circuit calculations
Fire safing and proofing	- submission of UL listed components - inspection of <u>all</u> penetrations - inspection/coating of all treated members
Uninterruptable Power Supplies	- testing of systems - battery capacity testing
Handicapped accessibility	- compliance with ANSI standards
Smoke Management System	- inspection of smoke seals - automated systems demonstration - engineers written operation sequence and performance - (BOCA 921.6 standard)

Air Balancing Reports

- | | |
|------------------------------|--|
| Fire Pump | - testing NFPA standard 20
- hydraulic calculations |
| Fire Service | - visual inspection prior to back filling
- Hazen Williams flow test |
| SFM Architectural Inspection | - sprinkler heads
- smoke and fire detectors
- wire glass
- stairwell penetrations
- door ratings (labels) |
| Domestic Water | - chlorination reports |

XIII. Agency Acceptance

The Construction Administrator shall arrange a final inspection at the completion of the work. The inspection team shall include representatives from the Architect, Construction Administrator, DPW and the user Agency. The purpose of this inspection (which is beyond normal punchlist activities) is to provide the end user with an opportunity to identify deficient items prior to turnover.

The resultant "Agency Acceptance List" will be evaluated by the Architect and Construction Administrator to determine if items cited are required by the contract documents. The Construction Administrator will direct the construction contractors to complete deficient items.

For those items which are outside the scope of work, the Construction Administrator will provide an order of magnitude estimate of the cost to attain Agency acceptance. These items will be evaluated by the Department of Public Works who shall provide the Construction Administrator and Architect with appropriate direction.

XIV. Project records

Upon completion of the project, the Construction Administrator shall turn over to the DPW documents submitted and maintained through the course of the project. These documents shall include but may not be limited to: drawings, specifications, submittals, shop drawings, samples, Engineering Bulletins, Field Office Files, correspondence, transmittals, schedules, etc.

These shall be delivered to the DPW archives at a prearranged time in storage boxes provided by the DPW indicating project number, date and storage number as designated by the DPW.

The filing system employed by the Construction Administrator shall be disseminated and explained for ease of use during future reference for the State. The filing system (3) copies, designation of sections, subsections and major topics will be provided for easy cross-reference.

Copies of all documentation sent to, or received from any construction contractor or its subcontractor has to be filed separately and copies of each has to be delivered to the DPW/CM in a timely manner. Further all records compiled by the Construction Administrator during the course of the contract will be available for review and inspection by the State.

FORMS FOR PROJECT CLOSEOUT:

1. Acceptance & Turnover Equipment & Systems
2. Punch list Form

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